

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

ON SEMICONDUCTOR CORPORATION)	
and SEMICONDUCTOR COMPONENTS)	
INDUSTRIES, LLC,)	
)	
Plaintiffs,)	
)	
v.)	C.A. No. 17-247-LPS-CJB
)	
POWER INTEGRATIONS, INC.,)	DEMAND FOR JURY TRIAL
)	
Defendant.)	

**POWER INTEGRATIONS' ANSWER AND COUNTERCLAIMS
TO PLAINTIFFS' FIRST AMENDED COMPLAINT**

Power Integrations, Inc. ("Power Integrations" or "PI") answers ON Semiconductor Corporation, and Semiconductor Components Industries, LLC (collectively, "ON" or "Plaintiffs") First Amended Complaint for Patent Infringement [D.I. 24] as follows. PI denies each and every allegation and characterization in ON's First Amended Complaint unless expressly admitted in the following paragraphs:

ANSWER ON PARTIES

1. Admitted.
2. Admitted.
3. Admitted.

ANSWER ON JURISDICTION AND VENUE

4. In response to Paragraph 4, PI admits that ON alleges an action for patent infringement arising under the patent laws of the United States.
5. Admitted.

6. PI lacks knowledge sufficient to confirm or deny the allegations of Paragraph 6 insofar as they relate to any third party and therefore denies the same. PI additionally denies the allegations as they relate to PI.

7. Admitted

ANSWER ON FACTUAL BACKGROUND

8. PI admits the United States Patent and Trademark Office issued U.S. Patent No. 7,440,298, entitled “Synchronous Rectification Circuit for Power Converters” (hereinafter, “the ’298 patent”) on October 21, 2008, and denies all other allegations of this Paragraph.

9. PI admits the United States Patent and Trademark Office issued U.S. Patent No. 7,564,705, entitled “Synchronous Rectification Circuit for Power Converters” (hereinafter, “the ’705 patent”), and denies all other allegations of this Paragraph.

10. PI admits the United States Patent and Trademark Office issued U.S. Patent No. 9,077,258, entitled “Regulation Circuit Associated with Synchronous Rectifier Providing Cable Compensation for the Power Converter and Method Thereof” (hereinafter, “the ’258 patent”) on July 7, 2015, and denies all other allegations of this Paragraph.

11. PI admits the United States Patent and Trademark Office issued U.S. Patent No. 7,796,407 (hereinafter, “the ’407 patent”) on September 14, 2010, and denies all other allegations of this Paragraph.

12. PI admits the United States Patent and Trademark Office issued U.S. Patent No. 7,800,923, entitled “Offline Synchronous Switching Regulator” (hereinafter, “the ’923 patent”) on September 21, 2010, and denies all other allegations of this Paragraph.

13. PI admits the United States Patent and Trademark Office issued U.S. Patent No. 7,102,211 (hereinafter, “the ’211 patent”) on September 5, 2006, and denies all other allegations of this Paragraph.

14. PI lacks knowledge sufficient to confirm or deny the allegations of this Paragraph and therefore denies the same.

15. PI admits that it has produced the InnoSwitch-CH, InnoSwitch-EP, InnoSwitch-CP, and InnoSwitch-CE families of products (“Accused InnoSwitch Families”). PI admits that it has produced the RDK-420 reference design kit, the RDK-469 reference design kit, and the RDK-531 reference design kit (“Accused Reference Design Kits”). PI denies all other allegations of this Paragraph.

16. PI admits that it maintains a website that has included the page <https://ac-dc.power.com/applications/usbpd-fast-chargers/>. PI admits that it has made statements as quoted in the transcript available at <http://www.nasdaq.com/aspx/call-transcript.aspx?StoryId=4016090&Title=power-integrations-powi-q3-2016-results-earnings-call-transcript> as of the date of this Answer. PI denies all other allegations of this Paragraph.

17. PI lacks knowledge sufficient to confirm or deny the allegations of this Paragraph and therefore denies the same.

18. PI admits that it maintains a website that has included the pages <https://ac-dc.power.com/videos/innoswitchsynchronous-rectification/> and <http://investors.power.com/investors/press-releases/press-release-details/2016/Power-Integrations-InnoSwitch-CP-ICs-Dramatically-Improve-Charging-Performance-of-Smart-Mobile-Devices/default.aspx>. PI lacks knowledge sufficient to confirm or deny the allegations

of Paragraph 18 insofar as they relate to Plaintiffs or any third party and therefore denies the same. PI denies any additional allegations as they relate to PI.

**ANSWER TO COUNT ONE – DIRECT INFRINGEMENT OF U.S. PATENT NO.
7,440,298 BY POWER INTEGRATIONS**

19. PI incorporates by reference as if fully set forth herein its responses to Paragraphs 1-18 above.

20. Denied.

21. PI lacks knowledge sufficient to confirm or deny the allegations of this Paragraph and therefore denies the same.

22. Denied.

23. Denied.

24. Denied.

25. Denied.

26. Denied.

**ANSWER TO COUNT TWO – INDUCED INFRINGEMENT OF U.S. PATENT NO.
7,440,298 BY POWER INTEGRATIONS**

27. PI incorporates by reference as if fully set forth herein its responses to Paragraphs 1-26 above.

28. Denied.

29. Denied.

30. PI admits that it has been aware of the existence of the '298 patent since December 27, 2016 and denies all other allegations of this Paragraph.

31. PI admits that it maintains a website that has included the pages <https://acdc.power.com/sites/default/files/PDFFiles/rdr420.pdf> and <https://acdc.power.com/sites/default/files/PDFFiles/der518.pdf>. PI admits that it has produced

the Accused InnoSwitch Families of products and maintains a website that has included the page: <https://acdc.power.com/products/innoswitch-family/>. PI admits that it has produced Accused Reference Design Kits. PI denies all other allegations of this Paragraph.

32. PI lacks knowledge sufficient to confirm or deny the allegations of this Paragraph insofar as they relate to any third party and therefore denies the same. PI admits that it has produced the Accused InnoSwitch Families of products. PI admits that it has produced the Accused Reference Design Kits. PI denies any additional allegations as they relate to PI.

33. PI lacks knowledge sufficient to confirm or deny the allegations of this Paragraph insofar as they relate to any third party and therefore denies the same. PI denies any additional allegations as they relate to PI.

**ANSWER TO COUNT THREE – CONTRIBUTORY INFRINGEMENT OF U.S.
PATENT NO. 7,440,298 BY POWER INTEGRATIONS**

34. PI incorporates by reference as if fully set forth herein its responses to Paragraphs 1-33 above.

35. Denied.

36. Denied.

37. Denied.

38. Denied.

39. PI admits that it has been aware of the existence of the '298 patent since December 27, 2016 and denies all other allegations of this Paragraph.

40. Denied.

**ANSWER TO COUNT FOUR – DIRECT INFRINGEMENT OF U.S. PATENT NO.
7,564,705 BY POWER INTEGRATIONS**

41. PI incorporates by reference as if fully set forth herein its responses to Paragraphs 1-40 above.

42. Denied.

43. PI lacks knowledge sufficient to confirm or deny the allegations of this Paragraph and therefore denies the same.

44. Denied.

45. Denied.

46. Denied.

47. Denied.

48. Denied.

ANSWER TO COUNT FIVE – INDUCED INFRINGEMENT OF U.S. PATENT NO. 7,564,705 BY POWER INTEGRATIONS

49. PI incorporates by reference as if fully set forth herein its responses to Paragraphs 1-48 above.

50. Denied.

51. Denied.

52. PI admits that it has been aware of the existence of the '705 patent since December 27, 2016 and denies all other allegations of this Paragraph.

53. PI admits that it maintains a website that has included the pages <https://acdc.power.com/sites/default/files/PDFFiles/rdr420.pdf> and <https://acdc.power.com/sites/default/files/PDFFiles/der518.pdf>. PI admits that it has produced the Accused InnoSwitch Families of products and maintains a website that has included the page: <https://acdc.power.com/products/innoswitch-family/>. PI admits that it has produced Accused Reference Design Kits. PI denies all other allegations of this Paragraph.

54. PI lacks knowledge sufficient to confirm or deny the allegations of this Paragraph insofar as they relate to any third party and therefore denies the same. PI admits that it has

produced the Accused InnoSwitch Families of products. PI admits that it has produced the Accused Reference Design Kits. PI denies any additional allegations as they relate to PI.

55. PI lacks knowledge sufficient to confirm or deny the allegations of this Paragraph insofar as they relate to any third party and therefore denies the same. PI denies any additional allegations as they relate to PI.

**ANSWER TO COUNT SIX – CONTRIBUTORY INFRINGEMENT OF U.S. PATENT
NO. 7,564,705 BY POWER INTEGRATIONS**

56. PI incorporates by reference as if fully set forth herein its responses to Paragraphs 1-55 above.

57. Denied.

58. Denied.

59. Denied.

60. Denied.

61. PI admits that it has been aware of the existence of the '705 patent since December 27, 2016 and denies all other allegations of this Paragraph.

62. Denied.

**ANSWER TO COUNT SEVEN – DIRECT INFRINGEMENT OF U.S. PATENT NO.
9,077,258 BY POWER INTEGRATIONS**

63. PI incorporates by reference as if fully set forth herein its responses to Paragraphs 1-62 above.

64. Denied.

65. PI lacks knowledge sufficient to confirm or deny the allegations of this Paragraph and therefore denies the same.

66. Denied.

67. Denied.

68. Denied.

69. Denied.

ANSWER TO COUNT EIGHT – INDUCED INFRINGEMENT OF U.S. PATENT NO. 9,077,258 BY POWER INTEGRATIONS

70. PI incorporates by reference as if fully set forth herein its responses to Paragraphs 1-69 above.

71. Denied.

72. Denied.

73. PI admits that it has been aware of the existence of the '258 patent since December 27, 2016 and denies all other allegations of this Paragraph.

74. PI admits that it maintains a website that has included the pages <https://acdc.power.com/sites/default/files/PDFFiles/rdr420.pdf> and <https://acdc.power.com/sites/default/files/PDFFiles/der518.pdf>. PI admits that it has produced the Accused InnoSwitch Families of products and maintains a website that has included the page: <https://acdc.power.com/products/innoswitch-family/>. PI admits that it has produced Accused Reference Design Kits. PI denies all other allegations of this Paragraph.

75. PI lacks knowledge sufficient to confirm or deny the allegations of this Paragraph insofar as they relate to any third party and therefore denies the same. PI admits that it has produced the Accused InnoSwitch Families of products. PI admits that it has produced the Accused Reference Design Kits. PI denies any additional allegations as they relate to PI.

76. PI lacks knowledge sufficient to confirm or deny the allegations of this Paragraph insofar as they relate to any third party and therefore denies the same. PI denies any additional allegations as they relate to PI.

**ANSWER TO COUNT NINE – CONTRIBUTORY INFRINGEMENT OF U.S. PATENT
NO. 9,077,258 BY POWER INTEGRATIONS**

77. PI incorporates by reference as if fully set forth herein its responses to Paragraphs 1-76 above.

78. Denied.

79. Denied.

80. Denied.

81. Denied.

82. PI admits that it has been aware of the existence of the '258 patent since December 27, 2016 and denies all other allegations of this Paragraph.

83. Denied.

**ANSWER TO COUNT TEN – DIRECT INFRINGEMENT OF U.S. PATENT NO.
7,796,407 BY POWER INTEGRATIONS**

84. PI incorporates by reference as if fully set forth herein its responses to Paragraphs 1-83 above.

85. Denied.

86. PI lacks knowledge sufficient to confirm or deny the allegations of this Paragraph and therefore denies the same.

87. Denied.

88. Denied.

89. Denied.

90. Denied.

91. Denied.

ANSWER TO COUNT ELEVEN – INDUCED INFRINGEMENT OF U.S. PATENT NO. 7,796,407 BY POWER INTEGRATIONS

92. PI incorporates by reference as if fully set forth herein its responses to Paragraphs 1-91 above.

93. Denied.

94. Denied.

95. PI admits that it has been aware of the existence of the '407 patent since December 27, 2016 and denies all other allegations of this Paragraph.

96. PI admits that it maintains a website that has included the pages <https://acdc.power.com/sites/default/files/PDFFiles/rdr420.pdf> and <https://acdc.power.com/sites/default/files/PDFFiles/der518.pdf>. PI admits that it has produced the Accused InnoSwitch Families of products and maintains a website that has included the page: <https://acdc.power.com/products/innoswitch-family/>. PI admits that it has produced Accused Reference Design Kits. PI denies all other allegations of this Paragraph.

97. PI lacks knowledge sufficient to confirm or deny the allegations of this Paragraph insofar as they relate to any third party and therefore denies the same. PI admits that it has produced the Accused InnoSwitch Families of products. PI admits that it has produced the Accused Reference Design Kits. PI denies any additional allegations as they relate to PI.

98. PI lacks knowledge sufficient to confirm or deny the allegations of this Paragraph insofar as they relate to any third party and therefore denies the same. PI denies any additional allegations as they relate to PI.

ANSWER TO COUNT TWELVE – CONTRIBUTORY INFRINGEMENT OF U.S. PATENT NO. 7,796,407 BY POWER INTEGRATIONS

99. PI incorporates by reference as if fully set forth herein its responses to Paragraphs 1-98 above.

100. Denied.

101. Denied.

102. Denied.

103. Denied.

104. PI admits that it has been aware of the existence of the '407 patent since December 27, 2016 and denies all other allegations of this Paragraph.

105. Denied.

ANSWER TO COUNT THIRTEEN – DIRECT INFRINGEMENT OF U.S. PATENT NO. 7,800,923 BY POWER INTEGRATIONS

106. PI incorporates by reference as if fully set forth herein its responses to Paragraphs 1-105 above.

107. Denied.

108. PI lacks knowledge sufficient to confirm or deny the allegations of this Paragraph and therefore denies the same.

109. Denied.

110. Denied.

111. Denied.

112. Denied.

113. Denied.

114. Denied.

115. Denied.

ANSWER TO COUNT FOURTEEN – INDUCED INFRINGEMENT OF U.S. PATENT NO. 7,800,923 BY POWER INTEGRATIONS

116. PI incorporates by reference as if fully set forth herein its responses to Paragraphs 1-115 above.

117. Denied.

118. Denied.

119. PI admits that it has been aware of the existence of the '923 patent since December 27, 2016 and denies all other allegations of this Paragraph.

120. PI admits that it maintains a website that has included the pages <https://acdc.power.com/sites/default/files/PDFFiles/rdr420.pdf> and <https://acdc.power.com/sites/default/files/PDFFiles/der518.pdf>. PI admits that it has produced the Accused InnoSwitch Families of products and maintains a website that has included the page: <https://acdc.power.com/products/innoswitch-family/>. PI admits that it has produced Accused Reference Design Kits. PI denies all other allegations of this Paragraph.

121. PI lacks knowledge sufficient to confirm or deny the allegations of this Paragraph insofar as they relate to any third party and therefore denies the same. PI admits that it has produced the Accused InnoSwitch Families of products. PI admits that it has produced the Accused Reference Design Kits. PI denies any additional allegations as they relate to PI.

122. PI lacks knowledge sufficient to confirm or deny the allegations of this Paragraph insofar as they relate to any third party and therefore denies the same. PI denies any additional allegations as they relate to PI.

**ANSWER TO COUNT FIFTEEN – CONTRIBUTORY INFRINGEMENT OF U.S.
PATENT NO. 7,800,923 BY POWER INTEGRATIONS**

123. PI incorporates by reference as if fully set forth herein its responses to Paragraphs 1-122 above.

124. Denied.

125. Denied.

126. Denied.

127. Denied.

128. PI admits that it has been aware of the existence of the '923 patent since December 27, 2016 and denies all other allegations of this Paragraph.

129. Denied.

ANSWER TO COUNT SIXTEEN – DIRECT INFRINGEMENT OF U.S. PATENT NO. 7,102,211 BY POWER INTEGRATIONS

130. PI incorporates by reference as if fully set forth herein its responses to Paragraphs 1-129 above.

131. Denied.

132. PI lacks knowledge sufficient to confirm or deny the allegations of this Paragraph and therefore denies the same.

133. Denied.

134. Denied.

135. Denied.

136. Denied.

137. Denied.

ANSWER TO COUNT SEVENTEEN – INDUCED INFRINGEMENT OF U.S. PATENT NO. 7,102,211 BY POWER INTEGRATIONS

138. PI incorporates by reference as if fully set forth herein its responses to Paragraphs 1-137 above.

139. Denied.

140. Denied.

141. PI admits that it has been aware of the existence of the '211 patent since December 27, 2016 and denies all other allegations of this Paragraph.

142. PI admits that it maintains a website that has included the pages <https://acdc.power.com/sites/default/files/PDFFiles/rdr420.pdf> and <https://acdc.power.com/sites/default/files/PDFFiles/der518.pdf>. PI admits that it has produced the Accused InnoSwitch Families of products and maintains a website that has included the page: <https://acdc.power.com/products/innoswitch-family/>. PI admits that it has produced Accused Reference Design Kits. PI denies all other allegations of this Paragraph.

143. PI lacks knowledge sufficient to confirm or deny the allegations of this Paragraph insofar as they relate to any third party and therefore denies the same. PI admits that it has produced the Accused InnoSwitch Families of products. PI admits that it has produced the Accused Reference Design Kits. PI denies any additional allegations as they relate to PI.

144. PI lacks knowledge sufficient to confirm or deny the allegations of this Paragraph insofar as they relate to any third party and therefore denies the same. PI denies any additional allegations as they relate to PI.

ANSWER TO COUNT EIGHTEEN – CONTRIBUTORY INFRINGEMENT OF U.S. PATENT NO. 7,102,211 BY POWER INTEGRATIONS

145. PI incorporates by reference as if fully set forth herein its responses to Paragraphs 1-144 above.

146. Denied.

147. Denied.

148. Denied.

149. Denied.

150. PI admits that it has been aware of the existence of the '211 patent since December 27, 2016 and denies all other allegations of this Paragraph.

151. Denied.

ANSWER TO DEMAND FOR JURY TRIAL

152. PI admits that ON has demanded a trial by jury as to all issues so triable.

ANSWER TO PRAYER FOR RELIEF

153. Power Integrations denies that ON is entitled to any relief requested or to any relief whatsoever.

POWER INTEGRATIONS' AFFIRMATIVE DEFENSES

PI asserts the following affirmative defenses. PI reserves the right to amend its defenses as additional information becomes available.

FIRST AFFIRMATIVE DEFENSE
(NON-INFRINGEMENT)

154. PI incorporates by reference as if fully set forth herein its responses to the allegations of Paragraphs 1-153 above.

155. Power Integrations does not infringe and has not infringed (literally, under the doctrine of equivalents, contributorily, or by inducement) any valid and enforceable claim of the '298, '705, '258, '407, '923, and '211 patents (collectively the "ON Asserted Patents").

SECOND AFFIRMATIVE DEFENSE
(INVALIDITY)

156. PI incorporates by reference as if fully set forth herein its responses to the allegations of Paragraphs 1-153 above and its affirmative defenses as set forth in Paragraphs 154-155 above.

157. Each of the ON Asserted Patents, including each of the claims identified in the First Amended Complaint, is invalid because each fails to satisfy the conditions for patentability specified in Title 35 of the United States Code, including without limitation §§ 101, 102, 103, and 112.

THIRD AFFIRMATIVE DEFENSE
(PROSECUTION HISTORY ESTOPPEL)

158. PI incorporates by reference as if fully set forth herein its responses to the allegations of Paragraphs 1-153 above and its affirmative defenses as set forth in Paragraphs 154-157 above.

159. ON is estopped, based on statements, representations and admissions made during prosecution of the patent applications resulting in the ON Asserted Patents, and during prosecution of related patent applications, from asserting any interpretation of any of the patent claims that would be broad enough to establish any alleged infringement by Power Integrations.

FOURTH AFFIRMATIVE DEFENSE
(COLLATERAL ESTOPPEL / JUDICIAL ESTOPPEL / RES JUDICATA)

160. PI incorporates by reference as if fully set forth herein its responses to the allegations of Paragraphs 1-153 above and its affirmative defenses as set forth in Paragraphs 154-159 above.

161. ON is precluded and/or estopped from asserting any matter of fact that contradicts any factual determination previously found by the jury or ruled upon by any Court in any prior matter involving Power Integrations and ON, including any of its predecessors in interest.

POWER INTEGRATIONS' COUNTERCLAIMS

For its Counterclaims against ON, Power Integrations alleges as follows:

THE PARTIES

1. Counterclaim-Plaintiff Power Integrations, Inc. ("Power Integrations" or "PI") is incorporated under the laws of the state of Delaware, and has a regular and established place of business at 5245 Hellyer Avenue, San Jose, California 95138.

2. On information and belief, Counterclaim-Defendant ON Semiconductor Corporation is a Delaware corporation with its principal place of business at 5005 East McDowell Road, Phoenix, Arizona, 85008.

3. On information and belief, Counterclaim-Defendant Semiconductor Components Industries, LLC is a Delaware limited liability company with its principal place of business at 5005 East McDowell Road, Phoenix, Arizona, 85008. Semiconductor Components Industries, LLC is the principal domestic operating subsidiary of ON Semiconductor Corporation and does business under the name of ON Semiconductor.

4. Counterclaim-Defendants ON Semiconductor Corporation and Semiconductor Components Industries, LLC will hereinafter be collectively referred to as “ON” or “Counterclaim-Defendants.”

JURISDICTION AND VENUE

5. This action arises under the patent laws of the United States, Title 35 U.S.C. § 1 *et seq.* This Court has subject matter jurisdiction under 28 U.S.C. §§ 1331 and 1338(a).

6. Upon information and belief, this Court has personal jurisdiction over Counterclaim-Defendants because Counterclaim-Defendants have purposely availed themselves of the privilege of conducting activities within this State and judicial District, including by filing suit against Power Integrations in the First Amended Complaint.

7. Upon information and belief, venue is proper in this Court pursuant to 28 U.S.C. §§ 1400(b) at least because the Counterclaim-Defendants are incorporated in this judicial District.

COUNTERCLAIM COUNT ONE

INFRINGEMENT OF U.S. PATENT NO. 8,077,483

8. The allegations of Counterclaim Paragraphs 1-7 are incorporated herein as though fully set forth herein.

9. Power Integrations is now, and has been since its issuance, the assignee and sole owner of all right, title, and interest in United States Patent No. 8,077,483, entitled “Method and apparatus for sensing multiple voltage values from a single terminal of a power converter controller” (“the ’483 patent”), which was duly and legally issued on Dec. 13, 2011. A true and correct copy of the ’483 patent is attached hereto as Exhibit A.

10. Counterclaim-Defendants are presently aware of the ’483 patent and their infringement thereof, at least as of the filing of these allegations.

11. Counterclaim-Defendants have been and are now continuing to infringe, directly and indirectly, including by inducing infringement, and contributing to the infringement of the ’483 patent by others in this District and elsewhere by making, using, selling, offering to sell, and/or importing devices, including power supply controller integrated circuit devices like the NCP1249 controller chip and NCP1249AD65GEVB power supply manufactured by Counterclaim-Defendants, which include a two-way sensor feature that is covered by one or more claims of the ’483 patent including, for example, claim 1, both literally and under the doctrine of equivalents, and contributing to and inducing infringement by third-parties.

12. On information and belief, the NCP1249 product is a “controller for a power converter,” as recited in claim 1. *See* Ex. B (NCP1249 Datasheet) at 1 (“The NCP1249 is a highly integrated high-voltage PWM controller capable of delivering a rugged and high performance offline power supply with extremely low no-load consumption.”).

13. On information and belief, when used as intended in a power supply application, such as the NCP1249AD65GEVB power supply manufactured by ON, the NCP1249 includes “a switching control that switches a power switch to regulate an output of the power converter,” as recited in claim 1. *See* Ex. B (NCP1249 Datasheet) at 1 (“With a supply range up to 30 V, the controller hosts a jittered 65–kHz switching circuitry operated in peak current mode control.”; “• 65–kHz Fixed–frequency Current–mode Control Operation with 130–kHz Excursion”); *see also* <http://www.onsemi.com/PowerSolutions/evalBoard.do?id=NCP1249AD65GEVB> and http://www.onsemi.com/pub/Collateral/NCP1249AD65GEVB_BOM_ROHS.PDF.

14. On information and belief, the NCP1249 product includes “a sensor coupled to receive a signal from a single terminal of the controller, the signal from the single terminal to represent a line input voltage of the power converter during at least a portion of an on time of the power switch,” as recited in claim 1. The NCP1249 includes a sensor coupled to receive a signal from a single terminal of the controller. The single terminal is the “OPP/Latch” pin and the NCP1249 includes circuitry associated with the pin for sensing the signal at that pin. The signal from the OPP/Latch pin represents a line input voltage of the power converter during at least a portion of an on time of the power switch. *See* Ex. B at 3.

15. On information and belief, the NCP1249 product includes “a sensor coupled to receive a signal from a single terminal of the controller, . . . the signal from the single terminal to represent an output voltage of the power converter during at least a portion of an off time of the power switch,” as recited in claim 1. The signal from the OPP/Latch pin represents an output voltage of the power converter during at least a portion of an off time of the power switch. *See* Ex. B at 19 (“• Latch input: the NCP1249 includes a latch input (pin 5) that can be used to sense an overvoltage condition on the adapter.”).

16. On information and belief, the NCP1249 product operates such that “the switching control is responsive to the sensor,” as recited in claim 1. See Ex. B at 19 (“• Internal OPP: by routing a portion of the negative voltage present during the on-time on the auxiliary winding to the dedicated OPP pin (pin 5), the user has a simple and non-dissipative means to alter the maximum peak current setpoint as the bulk voltage increases.”).

17. At least because the NCP1249 when used as intended in a power supply application, such as the NCP1249AD65GEVB power supply manufactured by Counterclaim-Defendants, satisfies each and every element of at least claim 1 of the ’483 patent, Counterclaim-Defendants have been directly infringing and are now directly infringing the ’483 patent under 35 U.S.C. § 271, either literally or under the doctrine of equivalents, in this district and elsewhere by making, using, selling, offering for sale, and/or importing into the United States infringing products. Infringing products include, but are not limited to, the NCP1249 controller chip and the NCP1249AD65GEVB power supply, and include any similarly functioning products that include a two-way sensor feature.

18. On information and belief, Counterclaim-Defendants’ intentional actions induce others to directly infringe, and those actions are undertaken with the specific intent that they will, in fact, induce direct infringement and with full knowledge that Counterclaim-Defendants’ products infringe one or more claims of the ’483 patent both literally and under the doctrine of equivalents. By way of example only, Counterclaim-Defendants sell and deliver the infringing NCP1249 and NCP1249AD65GEVB devices to U.S. distributors including Mouser Electronics located in Mansfield, TX and thereafter induce Mouser Electronics to sell and offer for sale the infringing products to customers in the United States thereby directly infringing the ’483 patent. Mouser Electronics maintains a website (mouser.com) available to U.S.-based customers that as a

result of Counterclaim-Defendants' inducement stocks, sells, and offers for sale the infringing products. At least as of October 13, 2016, these products were in stock in the U.S. and available for purchase and delivery to U.S. customers and, in fact, have been purchased from Mouser Electronics and shipped to U.S. customers. *See, e.g.,* <http://www.mouser.com/search/ProductDetail.aspx?R=0virtualkey0virtualkeyNCP1249AD65GEVB>.

19. In addition, Counterclaim-Defendants provide instructional materials to facilitate and induce customers to build similar infringing power supply products. *See, e.g.,* <http://www.onsemi.com/PowerSolutions/evalBoard.do?id=NCP1249AD65GEVB>, <http://www.onsemi.com/pub/Collateral/EVBUM2221-D.PDF>, http://www.onsemi.com/pub/Collateral/NCP1249AD65GEVB_TEST_PROCEDURE.PDF.

Complete power supplies, including at least the NCP1249AD65GEV, are provided by Counterclaim-Defendants to U.S.-based distributors including Mouser Electronics to be sold to U.S. customers thereby inducing additional acts of direct infringement. Counterclaim-Defendants further induce third parties to design the accused products into power supplies to be used in the United States, by, for example, providing datasheets, application notes, design notes, tutorial videos, and other collateral on their Internet website available to customers and instructing those customers how to incorporate the accused products into a power supply and to use the infringing two-way sensor feature. *See, e.g.,* <http://www.onsemi.com/PowerSolutions/product.do?id=NCP1249>.

20. Counterclaim-Defendants additionally advertise and promote the use of the accused products via YouTube videos demonstrating their use and how to include the products in a complete power supply to thereby infringe the claims of the '483 patent. *See, e.g.,*

https://www.youtube.com/watch?time_continue=3&v=i1usPLWRVJQ (entitled Power Supply Solutions with the NCP1249AD65GEVB Evaluation Board, Published on July 20, 2015).

According to the YouTube website: “This video demonstrates some of the capabilities and features of the NCP1249AD65GEVB evaluation board. The NCP1249 PWM controller from ON Semiconductor featured on this board is ideal for AC-DC adapters and power supply solutions. Understand how to set-up and measure results for this evaluation board to optimize efficiency.”

See https://www.youtube.com/watch?time_continue=3&v=i1usPLWRVJQ.

21. Further still, Counterclaim-Defendants employ sales representatives and field applications engineers that interact with and work directly with customers to assist them in designing complete power supplies that, upon information and belief, Counterclaim-Defendants know or have reason to believe are intended to be sold worldwide including in the United States.

22. On information and belief, Counterclaim-Defendants know that the accused products have no substantial non-infringing uses because the accused circuitry is used whenever the controller is operated and, therefore, necessarily infringe one or more claims of the ’483 patent both literally and under the doctrine of equivalents and thereby contribute to the infringement of third parties that use the NCP1249 in infringing power supply designs.

23. In view of Counterclaim-Defendants’ present notice of Power Integrations’ ’483 patent, and their present knowledge of their infringement, Counterclaim-Defendants’ continued infringement of the ’483 patent is willful, deliberate, and consciously wrongful, and Counterclaim-Defendants have no good reason to believe their infringing conduct is defensible. Counterclaim-Defendants’ acts of infringement are now, and will continue to be, willful so as to warrant the enhancement of damages awarded as a result of their infringement.

24. Counterclaim-Defendants' past and continued acts of infringement have caused irreparable harm to Power Integrations for which money damages are inadequate compensation. Counterclaim-Defendants' infringement has caused irreparable injury to Power Integrations and will continue to cause irreparable injury until Counterclaim-Defendants are enjoined from further infringement by this Court.

COUNTERCLAIM COUNT TWO

INFRINGEMENT OF U.S. PATENT NO. 8,773,871

25. The allegations of Counterclaim Paragraphs 1-24 are incorporated herein as though fully set forth herein.

26. Power Integrations is now, and has been since its issuance, the assignee and sole owner of all right, title, and interest in United States Patent No. 8,773,871, entitled "Method and apparatus for sensing multiple voltage values from a single terminal of a power converter controller" ("the '871 patent"), which was duly and legally issued on July 8, 2014. A true and correct copy of the '871 patent is attached hereto as Exhibit C.

27. Counterclaim-Defendants are presently aware of the '871 patent and their infringement thereof, at least as of the filing of these allegations.

28. Counterclaim-Defendants have been and are now continuing to infringe, directly and indirectly, including by inducing infringement, and contributing to the infringement of the '871 patent by others in this District and elsewhere by making, using, selling, offering to sell, and/or importing devices, including power supply controller integrated circuit devices like the NCP1249 controller chip and NCP1249AD65GEVB power supply manufactured by Counterclaim-Defendants, which include a two-way sensor feature that is covered by one or more claims of the '871 patent including, for example, claim 1, both literally and under the doctrine of equivalents, and contributing to and inducing infringement by third-parties.

29. On information and belief, the NCP1249 product is a “controller for a power converter,” as recited in claim 1. *See* Ex. B (NCP1249 Datasheet) at 1 (“The NCP1249 is a highly integrated high-voltage PWM controller capable of delivering a rugged and high performance offline power supply with extremely low no-load consumption.”).

30. On information and belief, the NCP1249 includes “a sensor coupled to receive a signal from a single terminal of the controller, the signal from the single terminal to represent an output voltage of the power converter during at least a portion of an off time of a power switch,” as recited in claim 1. *See* Ex. B at 19 (“• Latch input: the NCP1249 includes a latch input (pin 5) that can be used to sense an overvoltage condition on the adapter.”).

31. On information and belief, the NCP1249 product includes “a sensor coupled to receive a signal from a single terminal of the controller, . . . the signal from the single terminal to represent a line input voltage during a portion of an on time of the power switch,” as recited in claim 1. The single terminal is the “OPP/Latch” pin and the NCP1249 includes circuitry associated with the pin for sensing the signal at that pin. The signal from the OPP/Latch pin represents a line input voltage of the power converter during at least a portion of an on time of the power switch. *See* Ex. B at 3.

32. On information and belief, the NCP1249 product includes “a switching control to be coupled to switch the power switch to regulate the output of the power converter in response to the sensor.” *See* Ex. B at 1 (“With a supply range up to 30 V, the controller hosts a jittered 65-kHz switching circuitry operated in peak current mode control.”; “• 65-kHz Fixed-frequency Current-mode Control Operation with 130-kHz Excursion”).

33. On information and belief, the NCP1249 product includes “a power limiter coupled to the sensor to output a power limit signal to the switching control in response to the

line input voltage of the power converter, wherein the switching control is further coupled to switch the power switch to regulate the output of the power converter in response to the power limit signal.” See Ex. B at 19 (“• Internal OPP: by routing a portion of the negative voltage present during the on-time on the auxiliary winding to the dedicated OPP pin (pin 5), the user has a simple and non-dissipative means to alter the maximum peak current setpoint as the bulk voltage increases.”); see also Ex. B at 25 (“Internal Over Power Protection - There are several known ways to implement Over Power Protection (OPP), all suffering from particular problems. ... A way to reduce the power capability at high line is to capitalize on the negative voltage swing present on the auxiliary diode anode. During the turn-on time, this point dips to $-N V_{in}$, N being the turns ratio between the primary winding and the auxiliary winding. The negative plateau observed on Figure 73 will have amplitude depending on the input voltage. The idea implemented in this chip is to sum a portion of this negative swing with the 0.8 V internal reference level. For instance, if the voltage swings down to -150 mV during the on time, then the internal peak current set point will be fixed to $0.8 - 0.150 = 650$ mV. The adopted principle appears in Figure 74 and shows how the final peak current set point is constructed.”).

34. At least because the NCP1249 controller chip and the NCP1249AD65GEVB power supply manufactured by Counterclaim-Defendants each satisfies each and every element of at least claim 1 of the '871 patent, Counterclaim-Defendants have been directly infringing and are now directly infringing the '871 patent under 35 U.S.C. § 271, either literally or under the doctrine of equivalents, in this district and elsewhere by making, using, selling, offering for sale, and/or importing into the United States infringing products. Infringing products include, but are not limited to, the NCP1249 controller chip and the NCP1249AD65GEVB power supply, and include any similarly functioning products that include a two-way sensor feature.

35. On information and belief, Counterclaim-Defendants' intentional actions induce others to directly infringe, and those actions are undertaken with the specific intent that they will, in fact, induce direct infringement and with full knowledge that Counterclaim-Defendants' products infringe one or more claims of the '871 patent both literally and under the doctrine of equivalents. By way of example only, Counterclaim-Defendants sell and deliver the infringing NCP1249 and NCP1249AD65GEVB devices to U.S. distributors including Mouser Electronics located in Mansfield, TX and thereafter induce Mouser Electronics to sell and offer for sale the infringing products to customers in the United States thereby directly infringing the '871 patent. Mouser Electronics maintains a website (mouser.com) available to U.S.-based customers that as a result of Counterclaim-Defendants' inducement stocks, sells, and offers for sale the infringing products. At least as of October 13, 2016, these products were in stock in the U.S. and available for purchase and delivery to U.S. customers and, in fact, have been purchased from Mouser Electronics and shipped to U.S. customers. *See, e.g.,* <http://www.mouser.com/search/ProductDetail.aspx?R=0virtualkey0virtualkeyNCP1249AD65GEVB>.

36. In addition, Counterclaim-Defendants provide instructional materials to facilitate and induce customers to build similar infringing power supply products. *See, e.g.,* <http://www.onsemi.com/PowerSolutions/evalBoard.do?id=NCP1249AD65GEVB>, <http://www.onsemi.com/pub/Collateral/EVBUM2221-D.PDF>, http://www.onsemi.com/pub/Collateral/NCP1249AD65GEVB_TEST_PROCEDURE.PDF . Complete power supplies, including at least the NCP1249AD65GEV, are provided by Counterclaim-Defendants to U.S.-based distributors including Mouser Electronics to be sold to U.S. customers thereby inducing additional acts of direct infringement. Counterclaim-

Defendants further induce third parties to design the accused products into power supplies to be used in the United States, by, for example, providing datasheets, application notes, design notes, tutorial videos, and other collateral on their Internet website available to customers and instructing those customers how to incorporate the accused products into a power supply and to use the infringing two-way sensor feature. *See, e.g.,*

<http://www.onsemi.com/PowerSolutions/product.do?id=NCP1249> .

37. Counterclaim-Defendants additionally advertise and promote the use of the accused products via YouTube videos demonstrating their use and how to include the products in a complete power supply to thereby infringe the claims of the '871 patent. *See, e.g.,*

https://www.youtube.com/watch?time_continue=3&v=i1usPLWRVJQ (entitled Power Supply Solutions with the NCP1249AD65GEVB Evaluation Board, Published on July 20, 2015).

According to the YouTube website: “This video demonstrates some of the capabilities and features of the NCP1249AD65GEVB evaluation board. The NCP1249 PWM controller from ON Semiconductor featured on this board is ideal for AC-DC adapters and power supply solutions.

Understand how to set-up and measure results for this evaluation board to optimize efficiency.”

See https://www.youtube.com/watch?time_continue=3&v=i1usPLWRVJQ.

38. Further still, Counterclaim-Defendants employ sales representatives and field applications engineers that interact with and work directly with customers to assist them in designing complete power supplies that, upon information and belief, Counterclaim-Defendants know or have reason to believe are intended to be sold worldwide including in the United States.

39. On information and belief, Counterclaim-Defendants know that the accused products have no substantial non-infringing uses because the accused circuitry is used whenever the controller is operated and, therefore, necessarily infringe one or more claims of the '871

patent both literally and under the doctrine of equivalents and thereby contribute to the infringement of third parties that use the NCP1249 in infringing power supply designs.

40. In view of Counterclaim-Defendants' present notice of Power Integrations' '871 patent, and their present knowledge of their infringement, Counterclaim-Defendants' continued infringement of the '871 patent is willful, deliberate, and consciously wrongful, and Counterclaim-Defendants have no good reason to believe their infringing conduct is defensible. Counterclaim-Defendants' acts of infringement are now, and will continue to be, willful so as to warrant the enhancement of damages awarded as a result of their infringement.

41. Counterclaim-Defendants' past and continued acts of infringement have caused irreparable harm to Power Integrations for which money damages are inadequate compensation. Counterclaim-Defendants' infringement has caused irreparable injury to Power Integrations and will continue to cause irreparable injury until Counterclaim-Defendants are enjoined from further infringement by this Court.

COUNTERCLAIM COUNT THREE

INFRINGEMENT OF U.S. PATENT NO. 6,337,788

42. The allegations of Counterclaim Paragraphs 1-41 are incorporated herein as though fully set forth herein.

43. Power Integrations is now, and has been since its issuance, the assignee and sole owner of all right, title, and interest in United States Patent No. 6,337,788, entitled "Fault condition protection" ("the '788 patent"), which was duly and legally issued on January 8, 2002. A true and correct copy of the '788 patent is attached hereto as Exhibit D.

44. Counterclaim-Defendants are presently aware of the '788 patent and their infringement thereof, at least as of the filing of these allegations.

45. Counterclaim-Defendants have been and are now continuing to infringe, directly and indirectly, including by inducing infringement, and contributing to the infringement of the '788 patent by others in this District and elsewhere by making, using, selling, offering to sell, and/or importing devices, including power supply controller integrated circuit devices like the NCP1050, NCP1051, NCP1052, NCP1053, NCP1054, and NCP1055 controller chips ("NCP105X") manufactured by Counterclaim-Defendants, which include a fault detection feature that is covered by one or more claims of the '788 patent including, for example, claim 1, both literally and under the doctrine of equivalents, and contributing to and inducing infringement by third-parties.

46. On information and belief, the NCP105X products include "a circuit for protecting a power supply from fault conditions," as recited in claim 1. *See* Ex. E (NCP1050-1055 Datasheet, Rev. 14, April 2015) at 1 ("The NCP1050 through NCP1055 are monolithic high voltage regulators that enable end product equipment to be compliant with low standby power requirements. ... This device series features ... fault detector and a programmable timer for converter overload protection...and auto restart fault detection.").

47. On information and belief, the NCP105X products include "a switching device coupled to receive a switching signal to control power delivered to an output of the power supply," as recited in claim 1. *See* Ex. E at 15 ("The Power Switch Circuit is constructed with a SENSEFET™ in order to monitor the drain current. ... The high voltage Power Switch Circuit is monolithically integrated with the control logic circuitry and is designed to directly drive the converter transformer.").

48. On information and belief, the NCP105X products include "a timer coupled to the switching device and coupled to receive a feedback signal from a feedback control loop coupled

to the output of the power supply,” as recited in claim 1. *See* Ex. E at 15 (“Fault Detector - The NCP105X series has integrated Fault Detector circuitry for detecting application fault conditions such as open loop, overload or a short circuited output. A timer is generated by driving the supply capacitor with a known current and hysteretically regulating the supply voltage between set thresholds. The timer period starts when the supply voltage reaches the nominal upper threshold of 8.5 V and stops when the drain current of the integrated circuit draws the supply capacitor voltage down to the undervoltage lockout threshold of 7.5 V.”).

49. On information and belief, the NCP105X products operate such that “the feedback signal cycling periodically between a first state and a second state when the power supply operates normally and remaining idle when the power supply is in a fault condition,” as recited in claim 1. *See* Ex. E at 14 (“Control Input - The Control Input pin circuit has parallel source follower input stages with voltage clamps set at 1.35 and 4.6 V. Current sources clamp the input current through the followers at approximately 47.5 μ A with 10 μ A hysteresis. When a source or sink current in excess of this value is applied to this input, a logic signal generated internally changes state to block power switch conduction. ... In a typical converter application the control input current is drawn by an optocoupler. The collector of the optocoupler is connected to the Control Input pin and the emitter is connected to ground. The optocoupler LED is mounted in series with a shunt regulator (typically a TL431) at the DC output of the converter. When the power supply output is greater than the reference voltage (shunt regulator voltage plus optocoupler diode voltage drop), the optocoupler turns on, pulling down on the Control Input.”).

50. On information and belief, the NCP105X products operate such that “the switching signal cycling separately from cycling of the feedback signal,” as recited in claim 1. *See* Ex. E at Fig. 3.

51. On information and belief, the NCP105X products operate such that “the timer disabling the switching device to prevent power delivery to the output in response to the feedback signal,” as recited in claim 1. *See* Ex. E at 15.

52. At least because the NCP105X controller chips manufactured by Counterclaim-Defendants each satisfies each and every element of at least claim 1 of the ’788 patent, Counterclaim-Defendants have been directly infringing and are now directly infringing the ’788 patent under 35 U.S.C. § 271, either literally or under the doctrine of equivalents, in this district and elsewhere by making, using, selling, offering for sale, and/or importing into the United States infringing products. Infringing products include, but are not limited to, the NCP105X controller chips, and include any similarly functioning products that include a similar fault detection feature.

53. On information and belief, Counterclaim-Defendants’ intentional actions induce others to directly infringe, and those actions are undertaken with the specific intent that they will, in fact, induce direct infringement and with full knowledge that Counterclaim-Defendants’ products infringe one or more claims of the ’788 patent both literally and under the doctrine of equivalents. By way of example only, Counterclaim-Defendants sell and deliver the infringing NCP105X devices to U.S. distributors including Mouser Electronics located in Mansfield, TX and thereafter induce Mouser Electronics to sell and offer for sale the infringing products to customers in the United States thereby directly infringing the ’788 patent. Mouser Electronics maintains a website (mouser.com) available to U.S.-based customers that as a result of Counterclaim-Defendants inducement stocks, sells, and offers for sale the infringing products including the NCP1055ST100T3G (<http://www.mouser.com/ProductDetail/ON-Semiconductor/NCP1055ST100T3G>), NCP1053ST136T3G

(<http://www.mouser.com/ProductDetail/ON-Semiconductor/NCP1053ST136T3G>), NCP1055ST136T3G (<http://www.mouser.com/ProductDetail/ON-Semiconductor/NCP1055ST136T3G>), and NCP1053ST100T3G (<http://www.mouser.com/ProductDetail/ON-Semiconductor/NCP1053ST100T3G>). At least as of October 13, 2016, these products were in stock in the U.S. and available for purchase and delivery to U.S. customers and, in fact, have been purchased from Mouser Electronics and shipped to U.S. customers.

54. Counterclaim-Defendants further induce third parties to design the accused products into power supplies to be used in the United States, by, for example, providing datasheets, application notes, design notes, design and development tools, and other collateral on their Internet website available to customers and instructing those customers how to incorporate the accused products into a power supply and use the infringing fault detection circuitry. *See, e.g.,* http://www.onsemi.com/pub_link/Collateral/NCP1050-D.PDF, <http://www.onsemi.com/PowerSolutions/product.do?id=NCP1050>. In addition, Counterclaim-Defendants employ sales representatives and field applications engineers that interact with and work directly with customers to assist them in designing complete power supplies that, upon information and belief, Counterclaim-Defendants know or have reason to believe are intended to be sold worldwide including in the United States.

55. On information and belief, Counterclaim-Defendants know that the accused products have no substantial non-infringing uses because the accused circuitry is used whenever the controller is operated and, therefore, necessarily infringe one or more claims of the '788 patent both literally and under the doctrine of equivalents and thereby contribute to the infringement of third parties that use the NCP105X in infringing power supply designs.

56. On information and belief, Counterclaim-Defendants reverse engineered one or more of Power Integrations' TinySwitch® products and copied the essential circuit functionality to develop Counterclaim-Defendants' infringing products. On information and belief, Counterclaim-Defendants have been aware of, or have been willfully blind to, the existence of the '788 patent, and their infringement thereof, since at least the initial release of the infringing products. In view of Counterclaim-Defendants' present notice of Power Integrations' '788 patent, and their present knowledge of their infringement, Counterclaim-Defendants' continued infringement of the '788 patent is willful, deliberate, and consciously wrongful, and Counterclaim-Defendants have no good reason to believe their infringing conduct is defensible. Counterclaim-Defendants' acts of infringement are now, and will continue to be, willful so as to warrant the enhancement of damages awarded as a result of their infringement.

57. Counterclaim-Defendants' past and continued acts of infringement have caused irreparable harm to Power Integrations for which money damages are inadequate compensation. Counterclaim-Defendants' infringement has caused irreparable injury to Power Integrations and will continue to cause irreparable injury until Counterclaim-Defendants are enjoined from further infringement by this Court.

COUNTERCLAIM COUNT FOUR

INFRINGEMENT OF U.S. PATENT NO. 6,456,475

58. The allegations of Counterclaim Paragraphs 1-57 are incorporated herein as though fully set forth herein.

59. Power Integrations is now, and has been since its issuance, the assignee and sole owner of all right, title, and interest in United States Patent No. 6,456,475, entitled "Off-line converter with digital control" ("the '475 patent"), which was duly and legally issued on September 24, 2002. A true and correct copy of the '475 patent is attached hereto as Exhibit F.

60. Counterclaim-Defendants are presently aware of the '475 patent and their infringement thereof, at least as of the filing of these allegations.

61. Counterclaim-Defendants have been and are now continuing to infringe, directly and indirectly, including by inducing infringement, and contributing to the infringement of the '475 patent by others in this District and elsewhere by making, using, selling, offering to sell, and/or importing devices, including power supply controller integrated circuit devices like the NCP1050, NCP1051, NCP1052, NCP1053, NCP1054, and NCP1055 controller chips ("NCP105X") manufactured by Counterclaim-Defendants, which include a fault detection feature that is covered by one or more claims of the '475 patent including, for example, claim 17, both literally and under the doctrine of equivalents, and contributing to and inducing infringement by third-parties.

62. On information and belief, when operated the NCP105X products perform "a method for protecting a power supply from fault conditions," as recited in claim 17. *See* Ex. E (NCP1050-1055 Datasheet, Rev. 14, April 2015) at 1 ("The NCP1050 through NCP1055 are monolithic high voltage regulators that enable end product equipment to be compliant with low standby power requirements. ... This device series features ... fault detector and a programmable timer for converter overload protection...and auto restart fault detection.").

63. On information and belief, when operated the NCP105X products perform a method for protecting a power supply from fault conditions including the step of "in response to a switching signal, enabling or disabling the delivery of power to an output of the power supply," as recited in claim 17. *See* Ex. E at 14 ("Control Input - The Control Input pin circuit has parallel source follower input stages with voltage clamps set at 1.35 and 4.6 V. Current sources clamp the input current through the followers at approximately 47.5 μ A with 10 μ A hysteresis. When a

source or sink current in excess of this value is applied to this input, a logic signal generated internally changes state to block power switch conduction. Since the output of the Control Input sense is sampled continuously during ton (77% duty cycle), it is possible to turn the Power Switch Circuit on or off at any time within ton.”); *id.* (“Turn On Latch - The Oscillator output is typically a 77% positive duty cycle square waveform. This waveform is inverted and applied to the reset input of the turn-on latch to prevent any power switch conduction during the guaranteed off time. This square wave is also gated by the output of the control section and applied to the set input of the same latch. Because of this gating action, the power switch can be activated when the control input is not asserted and the oscillator output is high. Turn Off Latch - A Turn Off Latch feature has been incorporated into this device series to protect the power switch circuit from excessive current, and to reduce the possibility of output overshoot in reaction to a sudden load removal. ... The turn off latch is also reset when the Oscillator output signal goes low or the Control Input is asserted, thus terminating output MOSFET conduction. Because of this response to control input signals, it provides a very fast transient response and very tight load regulation.”).

64. On information and belief, when operated the NCP105X products perform a method for protecting a power supply from fault conditions including the step of “receiving a feedback signal representative of the output of the power supply,” as recited in claim 17. The feedback input is at the “Control Input” pin. The control input is described in the datasheet. *See* Ex. E at 2 and 14.

65. On information and belief, when operated the NCP105X products perform a method for protecting a power supply from fault conditions including the step of “the feedback signal cycling between a first state and a second state when the power supply operates normally

and not cycling between the first and second states when the power supply is in a fault condition,” as recited in claim 17. *See* Ex. E at 15 (“Fault Detector - The NCP105X series has integrated Fault Detector circuitry for detecting application fault conditions such as open loop, overload or a short circuited output. A timer is generated by driving the supply capacitor with a known current and hysteretically regulating the supply voltage between set thresholds. ... If, during this timer period, no feedback has been applied to the control input, the fault detect logic is set to indicate an abnormal condition.”).

66. On information and belief, when operated the NCP105X products perform a method for protecting a power supply from fault conditions including the step of “the switching signal cycling separately from the cycling of the feedback signal,” as recited in claim 17. The switching signal (“Power Switch Circuit Gate Drive”) cycles separately from the cycling of the feedback signal ($I_{CONTROL}$). *See* Ex. E at Fig. 3.

67. On information and belief, when operated the NCP105X products perform a method for protecting a power supply from fault conditions including the step of “timing the feedback signal to detect whether a fault condition exists in the power supply,” as recited in claim 17. *See* Ex. E at 15, Fig. 2.

68. On information and belief, when operated the NCP105X products perform a method for protecting a power supply from fault conditions including the step of “preventing the switching signal from enabling power delivery to the output in response to the detection of a fault condition,” as recited in claim 17. *See* Ex. E at 15, Fig. 4.

69. At least because the NCP105X controller chips manufactured by Counterclaim-Defendants each satisfies each and every element of at least claim 17 of the ’475 patent, Counterclaim-Defendants have been directly infringing and are now directly infringing the ’475

patent under 35 U.S.C. § 271, either literally or under the doctrine of equivalents, in this district and elsewhere by making, using, selling, offering for sale, and/or importing into the United States infringing products. Infringing products include, but are not limited to, the NCP105X controller chips, and include any similarly functioning products that include a similar fault detection feature.

70. On information and belief, Counterclaim-Defendants' intentional actions induce others to directly infringe, and those actions are undertaken with the specific intent that they will, in fact, induce direct infringement and with full knowledge that Counterclaim-Defendants' products infringe one or more claims of the '475 patent both literally and under the doctrine of equivalents. By way of example only, Counterclaim-Defendants sell and deliver the infringing NCP105X devices to U.S. distributors including Mouser Electronics located in Mansfield, TX and thereafter induce Mouser Electronics to sell and offer for sale the infringing products to customers in the United States thereby directly infringing the '475 patent. Mouser Electronics maintains a website (mouser.com) available to U.S.-based customers that as a result of Counterclaim-Defendants inducement stocks, sells, and offers for sale the infringing products including the NCP1055ST100T3G (<http://www.mouser.com/ProductDetail/ON-Semiconductor/NCP1055ST100T3G>), NCP1053ST136T3G (<http://www.mouser.com/ProductDetail/ON-Semiconductor/NCP1053ST136T3G>), NCP1055ST136T3G (<http://www.mouser.com/ProductDetail/ON-Semiconductor/NCP1055ST136T3G>), and NCP1053ST100T3G (<http://www.mouser.com/ProductDetail/ON-Semiconductor/NCP1053ST100T3G>). At least as of October 13, 2016, these products were in stock in the U.S. and available for purchase and

delivery to U.S. customers and, in fact, have been purchased from Mouser Electronics and shipped to U.S. customers.

71. Counterclaim-Defendants further induce third parties to design the accused products into power supplies to be used in the United States, by, for example, providing datasheets, application notes, design notes, design and development tools, and other collateral on their Internet website available to customers and instructing those customers how to incorporate the accused products into a power supply and use the infringing fault detection circuitry. *See, e.g.,* http://www.onsemi.com/pub_link/Collateral/NCP1050-D.PDF, <http://www.onsemi.com/PowerSolutions/product.do?id=NCP1050>. In addition, Counterclaim-Defendants employ sales representatives and field applications engineers that interact with and work directly with customers to assist them in designing complete power supplies that, upon information and belief, Counterclaim-Defendants know or have reason to believe are intended to be sold worldwide including in the United States.

72. On information and belief, Counterclaim-Defendants know that the accused products have no substantial non-infringing uses because the accused circuitry is used whenever the controller is operated and, therefore, necessarily infringe one or more claims of the '475 patent both literally and under the doctrine of equivalents and thereby contribute to the infringement of third parties that use the NCP105X in infringing power supply designs.

73. On information and belief, Counterclaim-Defendants reverse engineered one or more of Power Integrations' TinySwitch® products and copied the essential circuit functionality to develop Counterclaim-Defendants' infringing products. On information and belief, Counterclaim-Defendants have been aware of, or have been willfully blind to, the existence of the '475 patent, and their infringement thereof, since at least the initial release of the infringing

products.. In view of Counterclaim-Defendants' present notice of Power Integrations' '475 patent, and their present knowledge of their infringement, Counterclaim-Defendants' continued infringement of the '475 patent is willful, deliberate, and consciously wrongful, and Counterclaim-Defendants have no good reason to believe their infringing conduct is defensible. Counterclaim-Defendants' acts of infringement are now, and will continue to be, willful so as to warrant the enhancement of damages awarded as a result of their infringement.

74. Counterclaim-Defendants' past and continued acts of infringement have caused irreparable harm to Power Integrations for which money damages are inadequate compensation. Counterclaim-Defendants' infringement has caused irreparable injury to Power Integrations and will continue to cause irreparable injury until Counterclaim-Defendants are enjoined from further infringement by this Court.

COUNTERCLAIM COUNT FIVE

INFRINGEMENT OF U.S. PATENT NO. 6,229,366 C1

75. The allegations of Counterclaim Paragraphs 1-74 are incorporated herein as though fully set forth herein.

76. Power Integrations is now, and has been since its issuance, the assignee and sole owner of all right, title, and interest in United States Patent No. 6,229,366, entitled "Off-line converter with integrated softstart and frequency jitter" ("the '366 patent"), which was duly and legally issued on May 8, 2001. On December 20, 2011 the United States Patent and Trademark Office duly issued an *ex parte* reexamination certificate for the '366, which is designated U.S. Patent No. 6,229,366 C1. A true and correct copy of the '366 patent, including the reexamination certificate, is attached hereto as Exhibit G.

77. Counterclaim-Defendants, including their predecessor-in-interest Fairchild Semiconductor ("Fairchild"), are presently aware of the '366 patent and their infringement

thereof, at least as of October 20, 2004 when Power Integrations filed its original complaint as D.I. 1 in this judicial district alleging infringement in Case No. 04-1371-JJF (D. Del.).

Counterclaim-Defendants, including their predecessor-in-interest Fairchild, are also aware of the claims of the reexamination certificate and have been since Power Integrations sought to amend the claims in reexamination; further, Power Integrations filed its Answer and Counterclaims in Case No. 12-540-LPS (D. Del.) as D.I. 11 on June 21, 2012 alleging infringement of the '366 patent, including its reexamination certificate, by Fairchild.

78. Counterclaim-Defendants have been and are now continuing to infringe, directly and indirectly, including by inducing infringement, and contributing to the infringement of the '366 patent by others in this District and elsewhere by making, using, selling, offering to sell, and/or importing devices, including power supply controller integrated circuit devices like the NCP1070 – NCP1077 controller chips (“NCP107X”) manufactured by Counterclaim-Defendants, which include a soft start feature that is covered by one or more claims of the '366 patent including, for example, claim 1, both literally and under the doctrine of equivalents, and contributing to and inducing infringement by third-parties.

79. On information and belief, the NCP107X products include “a pulse width modulated switch,” as recited in claim 1. *See* Ex. H (NCP1070-1077 datasheet Rev. 7, April 2016) at 1 (“High-Voltage Switcher for Low Power Offline SMPS”).

80. On information and belief, the NCP107X products include “a first terminal” and “a second terminal,” as recited in claim 1. *See* Ex. H at Fig. 2.

81. On information and belief, the NCP107X products include “a switch comprising a control input, the switch allowing a signal to be transmitted between said first terminal and said second terminal according to a drive signal provided at said control input,” as recited in claim 1.

See Ex. H at Fig. 3, 1 (“The NCP107X products integrate a fixed frequency current mode controller with a 700 V MOSFET”).

82. On information and belief, the NCP107X products include “an oscillator that provides a maximum duty cycle signal comprising an on-state and an off-state,” as recited in claim 1. *See* Ex. H at Fig. 3. The oscillator provides a maximum duty cycle signal. *See* Ex. H at 6.

83. On information and belief, the NCP107X products include “a drive circuit that provides said drive signal according to said maximum duty cycle signal,” as recited in claim 1. *See* Ex. H at Fig. 3.

84. On information and belief, the NCP107X products include “a soft start circuit means for providing a signal instructing said drive circuit to disable said drive signal during at least a portion of said on-state of said maximum duty cycle,” as recited in claim 1. This element is a means-plus-function element. The function of the soft start circuit should be construed in accordance with the plain meaning of the claim language reciting the function. Examples of corresponding structures related to the soft start circuit are shown in Figures 3, 6, and 9 of the ’366 patent and described in the specification of the ’366 patent at col. 6, ll. 7-17; col. 6, l. 35- col. 7, l. 18; col. 11, ll. 40-50 and col. 12, ll. 5-10. The soft-start circuit means requires a soft-start signal which may be, but does not need to be, the first half-cycle of a repeating low frequency signal also used for frequency jittering. The function of the NCP107X soft start circuit means includes providing a signal instructing said drive circuit to disable said drive signal during at least a portion of said on-state of the maximum duty cycle; the structure of the means is as set forth in the ’366 patent, or, at least, an interchangeable structure. *See, e.g.*, Ex. H datasheet at 13 (“• Soft-Start: a 1 ms soft-start ensures a smooth startup sequence, reducing output

overshoots.”); *id.* 19 (“Soft-Start - The NCP107X features a 1 ms soft-start which reduces the power-on stress but also contributes to lower the output overshoot. Figure 31 shows a typical operating waveform. The NCP107X features a novel patented structure which offers a better soft-start ramp, almost ignoring the start-up pedestal inherent to traditional current-mode supplies . . . Figure 31. The 1 ms soft-start sequence”); *see also id.* at Fig. 3 (“Soft Start”).

85. At least because the NCP107X controller chips manufactured by Counterclaim-Defendants each satisfies each and every element of at least claim 1 of the ’366 patent, Counterclaim-Defendants have been directly infringing and are now directly infringing the ’366 patent under 35 U.S.C. § 271, either literally or under the doctrine of equivalents, in this district and elsewhere by making, using, selling, offering for sale, and/or importing into the United States infringing products. Infringing products include, but are not limited to, the NCP107X controller chips, and include any similarly functioning products that include a similar soft start feature.

86. On information and belief, Counterclaim-Defendants’ intentional actions induce others to directly infringe, and those actions are undertaken with the specific intent that they will, in fact, induce direct infringement and with full knowledge that Counterclaim-Defendants’ products infringe one or more claims of the ’366 patent both literally and under the doctrine of equivalents. By way of example only, Counterclaim-Defendants sell and deliver the infringing NCP107X devices to U.S. distributors including Mouser Electronics located in Mansfield, TX and thereafter induce Mouser Electronics to sell and offer for sale the infringing products to customers in the United States thereby directly infringing the ’366 patent. Mouser Electronics maintains a website (mouser.com) available to U.S.- based customers that as a result of Counterclaim-Defendants’ inducement stocks, sells, and offers for sale the infringing products

including the NCP1070STAT3G (<http://www.mouser.com/ProductDetail/ON-Semiconductor/NCP1070STAT3G>), and NCP1070P065G (<http://www.mouser.com/ProductDetail/ON-Semiconductor/NCP1070P065G>). As of October 13, 2016, these products were in stock in the U.S. and available for purchase and delivery to U.S. customers and, in fact, have been purchased from Mouser Electronics and shipped to U.S. customers.

87. Moreover, Counterclaim-Defendants provide complete power supplies, which include the accused products, such as the NCP1070SOTGEVB (<http://www.mouser.com/ProductDetail/ON-Semiconductor/NCP1070SOTGEVB>), along with instructional materials to facilitate and induce customers to build similar infringing power supply products. *See, e.g.,*

http://www.onsemi.com/pub_link/Collateral/NCP1070SOTGEVB_TEST_PROCEDURE.PDF.

Examples of these complete power supplies are also provided to U.S.-based distributors including Mouser Electronics to be sold to U.S. customers thereby inducing additional acts of direct infringement; for example, the NCP1070SOTGEVB is stocked by Mouser Electronics in the U.S. and as of October 13, 2016 has been sold to U.S.-based customers. Counterclaim-Defendants further induce third parties to design the accused products into power supplies to be used in the United States, by, for example, providing datasheets, application notes, design notes, tutorial videos, and other collateral on their Internet website available to customers and instructing those customers how to incorporate the accused products with the infringing soft-start functionality into a power supply. *See, e.g.,*

http://www.onsemi.com/pub_link/Collateral/NCP1070-D.PDF,

<http://www.onsemi.com/PowerSolutions/product.do?id=NCP1070>.

88. Counterclaim-Defendants additionally advertise and promote the use of the accused products via YouTube videos demonstrating their use and how to include the products in a complete power supply. *See, e.g.*, https://www.youtube.com/watch?v=P4EW_YWLnnY (entitled High-Voltage Switcher Regulator for Low Power Offline SMPS - NCP1070SOTGEVB, Published on Aug 29, 2014). In addition, Counterclaim-Defendants employ sales representatives and field applications engineers that interact with and work directly with customers to assist them in designing complete power supplies that, upon information and belief, Counterclaim-Defendants know or have reason to believe are intended to be sold worldwide including in the United States.

89. On information and belief, Counterclaim-Defendants know that the accused products have no substantial non-infringing uses because the accused circuitry is used whenever the controller is operated and, therefore, necessarily infringe one or more claims of the '366 patent both literally and under the doctrine of equivalents and thereby contribute to the infringement of third parties that use the NCP107X in infringing power supply designs.

90. In view of Counterclaim-Defendants' long history of notice of Power Integrations' '366 patent, and their prior and present knowledge of their infringement, Counterclaim-Defendants' continued infringement of the '366 patent is willful, deliberate, and consciously wrongful, and Counterclaim-Defendants have no good reason to believe their infringing conduct is defensible. Counterclaim-Defendants' acts of infringement are now, and will continue to be, willful so as to warrant the enhancement of damages awarded as a result of their infringement.

91. Counterclaim-Defendants' past and continued acts of infringement have caused irreparable harm to Power Integrations for which money damages are inadequate compensation.

Counterclaim-Defendants' infringement has caused irreparable injury to Power Integrations and will continue to cause irreparable injury until Counterclaim-Defendants are enjoined from further infringement by this Court.

COUNTERCLAIM COUNT SIX

INFRINGEMENT OF U.S. PATENT NO. 6,107,851 C1

92. The allegations of Counterclaim Paragraphs 1-91 are incorporated herein as though fully set forth herein.

93. Power Integrations is now, and has been since its issuance, the assignee and sole owner of all right, title, and interest in United States Patent No. 6,107,851, entitled "Offline converter with integrated softstart and frequency jitter" ("the '851"), which was duly and legally issued on August 22, 2000. On November 9, 2010 the United States Patent and Trademark Office duly issued an *ex parte* reexamination certificate for the '851, which is designated U.S. Patent No. 6,107,851 C1. A true and correct copy of the '851 patent, including the reexamination certificate, is attached hereto as Exhibit I.

94. Counterclaim-Defendants, including their predecessor-in-interest Fairchild Semiconductor ("Fairchild"), are presently aware of the '851 patent and their infringement thereof, at least as of October 20, 2004 when Power Integrations filed its original complaint as D.I. 1 in this judicial district alleging infringement in Case No. 04-1371-JJF (D. Del.) ("*Fairchild I*"). On May 23, 2008, Power Integrations once again filed suit against Counterclaim-Defendants' additional predecessor-in-interest System General Corp. in its original complaint as D.I. 1 in Case No. 08-309-LPS (D. Del.) ("*Fairchild II*"). Counterclaim-Defendants, including their predecessors-in-interest Fairchild and System General are also aware of the claims of the reexamination certificate and have been since Power Integrations sought to amend the claims in reexamination; additionally, on June 6, 2011, Power Integrations filed its

Amended Complaint as D.I. 401 in Case No. 08-309-LPS (D. Del.) alleging infringement of U.S. Patent No. 6,107,851 C1 against Fairchild and System General. According to a Jury in this district, Counterclaim-Defendants, including their predecessors-in-interest Fairchild and System General, directly infringed the '851 patent and also induced others to infringe. Although the finding of induced infringement was vacated, the underlying judgment of direct infringement was not disturbed. *Power Integrations, Inc. v. Fairchild Semiconductor Int'l, Inc.*, 843 F.3d 1315, 1329 (Fed. Cir. 2016). Accordingly, the judgment of direct infringement of the '851 patent is now final.

95. Although Fairchild and System General sought to challenge the validity of the '851 patent's claims, the *Fairchild II* Jury rejected their arguments and returned a verdict in Power Integrations' favor. That judgment as to the validity of the '851 patent claims is also now final.

96. On August 11, 2011, ON filed two petitions for *Inter Partes* Review (IPR2016-01598 and IPR2016-01599) alleging that the claims of the '851 patent were invalid; these petitions were found to lack merit and Patent Trials and Appeals Board denied IPR institution, once again rejecting Counterclaim-Defendants' invalidity arguments.

97. Because Counterclaim-Defendants, including their predecessors-in-interest Fairchild and System General, have tried and failed (both in Court and through IPR) to invalidate the claims of the '851 patent, resulting in a valid and final judgment of no invalidity, Counterclaim-Defendants are now collaterally estopped and precluded under *Res Judicata* from alleging the invalidity of the '851 patent claims. Counterclaim-Defendants, including their predecessors-in-interest Fairchild and System General, are also estopped and precluded from challenging any previously determined issue of fact.

98. Counterclaim-Defendants have been and are now continuing to infringe, directly and indirectly, including by inducing infringement, and contributing to the infringement of the '851 patent by others in this District and elsewhere by making, using, selling, offering to sell, and/or importing devices, including power supply controller integrated circuit devices like the NCP1070 – NCP1077 controller chips (“NCP107X”) manufactured by Counterclaim-Defendants, which include a frequency jitter feature that is covered by one or more claims of the '851 patent including, for example, claim 20, both literally and under the doctrine of equivalents, and contributing to and inducing infringement by third-parties.

99. On information and belief, the NCP107X products include “a regulation circuit,” as recited in claim 20. *See* Ex. H (NCP1070-1077 datasheet Rev. 7, April 2016) at 1 (“High-Voltage Switcher for Low Power Offline SMPS”).

100. On information and belief, the NCP107X products include “a first terminal” and “a second terminal,” as recited in claim 20. *See* Ex. H at Fig. 2.

101. On information and belief, the NCP107X products include “a feedback terminal coupled to disable the regulation circuit,” as recited in claim 20. *See* Ex. H at Fig. 2.

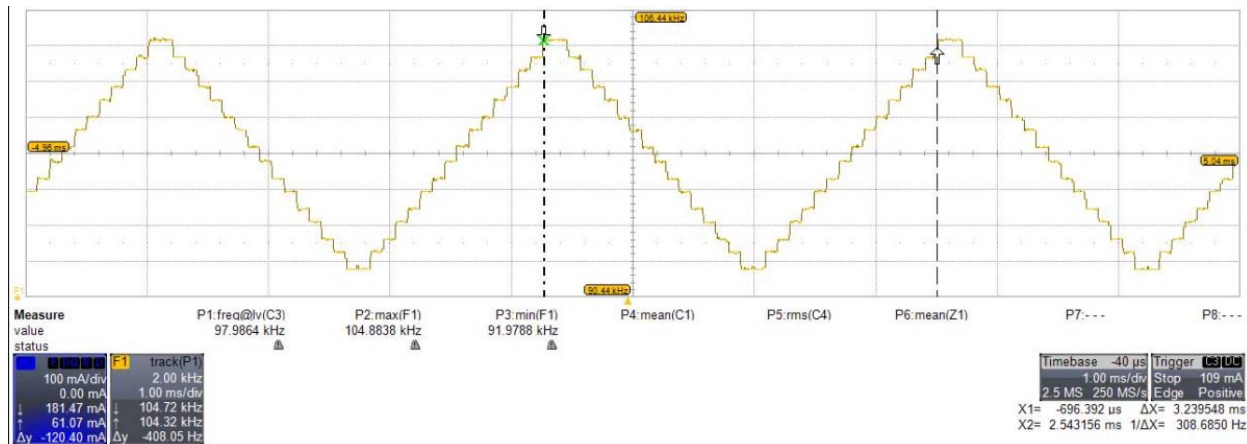
102. On information and belief, the NCP107X products include “a switch comprising a control input, said switch allowing a signal to be transmitted between said first terminal and said second terminal according to a drive signal provided at said control input,” as recited in claim 20. *See* Ex. H at Fig. 2, 1 (“The NCP107X products integrate a fixed frequency current mode controller with a 700 V MOSFET”).

103. On information and belief, the NCP107X products include “a frequency variation circuit that provides a frequency variation signal, wherein the frequency variation signal is an internally controlled signal within the regulation circuit,” as recited in claim 20. *See* Ex. H at

Figs. 3, 32, pp. 13 (“Frequency jittering: an internal low–frequency modulation signal varies the pace at which the oscillator frequency is modulated. This helps spreading out energy in conducted noise analysis. To improve the EMI signature at low power levels, the jittering remains active in frequency foldback mode.”); *id.* at 19 (“Jittering - Frequency jittering is a method used to soften the EMI signature by spreading the energy in the vicinity of the main switching component. The NCP107X offers a $\pm 6\%$ deviation of the nominal switching frequency. The sweep sawtooth is internally generated and modulates the clock up and down with a fixed frequency of 300 Hz. Figure 32 shows the relationship between the jitter ramp and the frequency deviation. It is not possible to externally disable the jitter.”).

104. On information and belief, the NCP107X products include “an oscillator that provides an oscillation signal having a frequency range, said frequency of said oscillation signal varying within said frequency range according to said frequency variation signal, said oscillator further providing a maximum duty cycle signal comprising a first state and a second state,” as recited in claim 20. *See* Ex. H at Figs. 3, 32, pp. 6, 13.

105. On information and belief, the NCP107X products include “a frequency variation circuit that provides a frequency variation signal, wherein the frequency variation signal is an internally controlled signal within the regulation circuit” and “an oscillator that provides an oscillation signal having a frequency range, said frequency of said oscillation signal varying within said frequency range according to said frequency variation signal, said oscillator further providing a maximum duty cycle signal comprising a first state and a second state,” as recited in claim 20, as additionally shown from the operation of the NCP1070SOTGEVB power supply manufactured by Counterclaim-Defendants, as shown below:



106. On information and belief, the NCP107X products include “a drive circuit that provides said drive signal when said maximum duty cycle signal is in said first state and said regulation circuit is not disabled,” as recited in claim 20. *See* Ex. H at Fig. 3.

107. At least because the NCP107X controller chips manufactured by Counterclaim-Defendants satisfy each and every element of at least claim 20 of the '851 patent, Counterclaim-Defendants have been directly infringing and are now directly infringing the '851 patent under 35 U.S.C. § 271, either literally or under the doctrine of equivalents, in this district and elsewhere by making, using, selling, offering for sale, and/or importing into the United States infringing products. Infringing products include, but are not limited to, the NCP107X controller chips, and include any similarly functioning products that include a similar frequency jitter feature.

108. On information and belief, Counterclaim-Defendants' intentional actions induce others to directly infringe, and those actions are undertaken with the specific intent that they will, in fact, induce direct infringement and with full knowledge that Counterclaim-Defendants' products infringe one or more claims of the '851 patent both literally and under the doctrine of equivalents. By way of example only, Counterclaim-Defendants sell and deliver the infringing NCP107X devices to U.S. distributors including Mouser Electronics located in Mansfield, TX

and thereafter induce Mouser Electronics to sell and offer for sale the infringing products to customers in the United States thereby directly infringing the '851 patent. Mouser Electronics maintains a website (mouser.com) available to U.S.-based customers that as a result of Counterclaim-Defendants' inducement stocks, sells, and offers for sale the infringing products including the NCP1070STAT3G (<http://www.mouser.com/ProductDetail/ON-Semiconductor/NCP1070STAT3G>), and NCP1070P065G (<http://www.mouser.com/ProductDetail/ON-Semiconductor/NCP1070P065G>). As of October 13, 2016, these products were in stock in the U.S. and available for purchase and delivery to U.S. customers and, in fact, have been purchased from Mouser Electronics and shipped to U.S. customers.

109. Moreover, Counterclaim-Defendants provide complete power supplies, which include the accused products, such as the NCP1070SOTGEVB (<http://www.mouser.com/ProductDetail/ON-Semiconductor/NCP1070SOTGEVB>), along with instructional materials to facilitate and induce customers to build similar infringing power supply products. *See, e.g.,*

http://www.onsemi.com/pub_link/Collateral/NCP1070SOTGEVB_TEST_PROCEDURE.PDF.

Examples of these complete power supplies are also provided to U.S.-based distributors including Mouser Electronics to be sold to U.S. customers thereby inducing additional acts of direct infringement; for example, the NCP1070SOTGEVB is stocked by Mouser Electronics in the U.S. and as of October 13, 2016 has been sold to U.S.-based customers. Counterclaim-Defendants further induce third parties to design the accused products into power supplies to be used in the United States, by, for example, providing datasheets, application notes, design notes, tutorial videos, and other collateral on their Internet website available to customers and

instructing those customers how to incorporate the accused products with the infringing frequency jitter into a power supply. *See, e.g.,*

http://www.onsemi.com/pub_link/Collateral/NCP1070-D.PDF,

<http://www.onsemi.com/PowerSolutions/product.do?id=NCP1070>.

110. Counterclaim-Defendants additionally advertise and promote the use of the accused products via YouTube videos demonstrating their use and how to include the products in a complete power supply. *See, e.g.,* https://www.youtube.com/watch?v=P4EW_YWLnnY (entitled High-Voltage Switcher Regulator for Low Power Offline SMPS - NCP1070SOTGEVB, Published on Aug 29, 2014). In addition, Counterclaim-Defendants employ sales representatives and field applications engineers that interact with and work directly with customers to assist them in designing complete power supplies that, upon information and belief, Counterclaim-Defendants know or have reason to believe are intended to be sold worldwide including in the United States.

111. On information and belief, Counterclaim-Defendants know that the accused products have no substantial non-infringing uses because the accused circuitry is used whenever the controller is operated, and in fact, because the infringing frequency jitter circuitry is necessarily present in the products as sold, operates by default and cannot be disabled by a customer, the accused products necessarily infringe one or more claims of the '851 patent both literally and under the doctrine of equivalents and thereby contribute to the infringement of third parties that use the NCP107X in infringing power supply designs.

112. In view of Counterclaim-Defendants' long history of notice of Power Integrations' '851 patent, their repeated failed attempts to challenge the validity of the '851 patent (including a final judgment of no invalidity), their prior adjudged direct infringement

(including a final judgment of infringement), and their prior and present knowledge of their ongoing infringement, Counterclaim-Defendants' continued infringement of the '851 patent is willful, deliberate, and consciously wrongful, and Counterclaim-Defendants have no good reason to believe their infringing conduct is defensible. Counterclaim-Defendants' acts of infringement are now, and will continue to be, willful so as to warrant the enhancement of damages awarded as a result of their infringement.

113. Counterclaim-Defendants' past and continued acts of infringement have caused irreparable harm to Power Integrations for which money damages are inadequate compensation. Counterclaim-Defendants' infringement has caused irreparable injury to Power Integrations and will continue to cause irreparable injury until Counterclaim-Defendants are enjoined from further infringement by this Court.

COUNTERCLAIM COUNT SEVEN

INFRINGEMENT OF U.S. PATENT NO. 6,249,876

114. The allegations of Counterclaim Paragraphs 1-113 are incorporated herein as though fully set forth herein.

115. Power Integrations is now, and has been since its issuance, the assignee and sole owner of all right, title, and interest in United States Patent No. 6,249,876, entitled "Frequency jittering control for varying the switching frequency of a power supply" ("the '876"), which was duly and legally issued on June 19, 2001. A true and correct copy of the '876 patent is attached hereto as Exhibit J.

116. Counterclaim-Defendants, including their predecessor-in-interest Fairchild Semiconductor ("Fairchild"), are presently aware of the '876 patent and their infringement thereof, at least as of October 20, 2004 when Power Integrations filed its original complaint as D.I. 1 in this judicial district alleging infringement in Case No. 04-1371-JJF (D. Del.)

(“*Fairchild I*”). On May 23, 2008, Power Integrations once again filed suit against Counterclaim-Defendants’ additional predecessor-in-interest System General Corp. in its original complaint as D.I. 1 in Case No. 08-309-LPS (D. Del.) (“*Fairchild II*”).

117. As found in the *Fairchild I* case, according to a Jury in this district, Counterclaim-Defendants, including their predecessor-in-interest Fairchild, directly infringed the ’876 patent and also induced others to infringe. Additionally, the *Fairchild I* Jury found that the ’876 patent was not invalid. These judgments are now final and binding. See *Power Integrations, Inc. v. Fairchild Semiconductor Int’l, Inc.*, 711 F.3d 1348 (Fed. Cir. 2013).

118. As found in the *Fairchild II* case, according to a Jury in this district, Counterclaim-Defendants, including their predecessors-in-interest Fairchild and System General Corp., again directly infringed the ’876 patent and also induced others to infringe. Although the finding of induced infringement was vacated, the underlying finding of direct infringement was not disturbed. *Power Integrations, Inc. v. Fairchild Semiconductor Int’l, Inc.*, 843 F.3d 1315, 1329 (Fed. Cir. 2016). Accordingly, this judgment of direct infringement of the ’876 patent is now final.

119. Although Fairchild and System General sought to challenge the validity of the ’876 patent’s claims, both the *Fairchild I* and the *Fairchild II* Juries rejected their arguments and returned a verdict in Power Integrations’ favor. These judgments as to the validity of the ’876 patent claims are now final.

120. e that the district court did not abuse its discretion in certifying the appeal under Rule 54(b). HN2 Under that rule, [**5] “[w]hen an action presents more than one claim for relief . . . the court may direct entry of final judgment as to one or more, but fewer than all, claims or parties only if the court expressly determines that there is no just reason for delay.” Fed. R. Civ. P. 54(b).

Intellectual Ventures I LLC v. Capital One Fin. Corp., 850 F.3d 1332, 1336 (Fed. Cir. 2017)

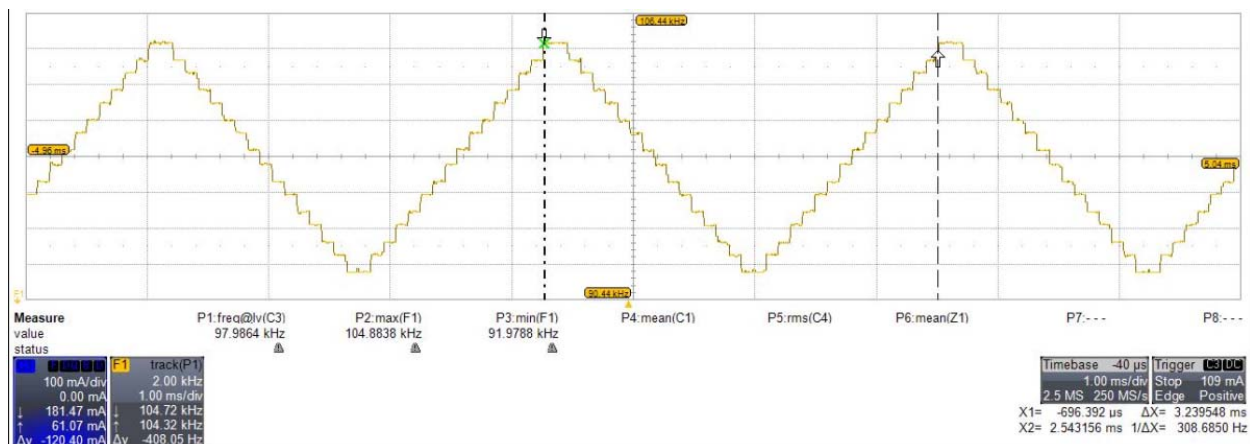
121. Because Counterclaim-Defendants, including their predecessors-in-interest Fairchild and System General, have tried and failed (twice) to invalidate the claims of the '876 patent, resulting in two valid and final judgments of no invalidity, Counterclaim-Defendants are now collaterally estopped and precluded under *Res Judicata* from alleging the invalidity of the '876 patent claims. Counterclaim-Defendants, including their predecessors-in-interest Fairchild and System General, are also estopped and precluded from challenging any previously determined issue of fact.

122. Counterclaim-Defendants have been and are now continuing to infringe, directly and indirectly, including by inducing infringement, and contributing to the infringement of the '876 patent by others in this District and elsewhere by making, using, selling, offering to sell, and/or importing devices, including power supply controller integrated circuit devices like the NCP1070 – NCP1077 controller chips (“NCP107X”) manufactured by Counterclaim-Defendants, which include a frequency jitter feature that is covered by one or more claims of the '876 patent including, for example, claim 1, both literally and under the doctrine of equivalents, and contributing to and inducing infringement by third-parties.

123. On information and belief, the NCP107X products include “digital frequency jittering circuit for varying the switching frequency of a power supply,” as recited in claim 1. *See* Ex. H (NCP1070-1077 datasheet Rev. 7, April 2016) at Figs. 3, 32, pp. 13 (“Frequency jittering: an internal low-frequency modulation signal varies the pace at which the oscillator frequency is modulated. This helps spreading out energy in conducted noise analysis. To improve the EMI signature at low power levels, the jittering remains active in frequency foldback mode.”); *id.* at 19 (“Jittering - Frequency jittering is a method used to soften the EMI signature by spreading the

energy in the vicinity of the main switching component. The NCP107X offers a $\pm 6\%$ deviation of the nominal switching frequency. The sweep sawtooth is internally generated and modulates the clock up and down with a fixed frequency of 300 Hz. Figure 32 shows the relationship between the jitter ramp and the frequency deviation. It is not possible to externally disable the jitter.”).

124. As additionally shown from the operation of the NCP1070SOTGEVB power supply manufactured by Counterclaim-Defendants, below, on information and belief, the NCP107X products include a digital frequency jittering circuit.



125. On information and belief, and as shown above in the operation of the NCP1070SOTGEVB power supply, the NCP107X products include “an oscillator for generating a signal having a switching frequency, the oscillator having a control input for varying the switching frequency,” as recited in claim 1. *See* Ex. H at Figs. 3, 32, pp. 6, 13.

126. On information and belief, and as shown above in the operation of the NCP1070SOTGEVB power supply, the NCP107X products include “a digital to analog converter coupled to the control input for varying the switching frequency,” as recited in claim 1. *See* Ex. H at Figs. 3, 32, pp. 6, 13.

127. On information and belief, and as shown above in the operation of the NCP1070SOTGEVB power supply, the NCP107X products include “a counter coupled to the output of the oscillator and to the digital to analog converter, the counter causing the digital to analog converter to adjust the control input and to vary the switching frequency,” as recited in claim 1. See Ex. H at Figs. 3, 32, pp. 6, 13.

128. At least because the NCP107X controller chips manufactured by Counterclaim-Defendants each satisfies each and every element of at least claim 1 of the '876 patent, Counterclaim-Defendants have been directly infringing and are now directly infringing the '876 patent under 35 U.S.C. § 271, either literally or under the doctrine of equivalents, in this district and elsewhere by making, using, selling, offering for sale, and/or importing into the United States infringing products. Infringing products include, but are not limited to, the NCP107X controller chips, and include any similarly functioning products that include a similar frequency jitter feature.

129. On information and belief, Counterclaim-Defendants' intentional actions induce others to directly infringe, and those actions are undertaken with the specific intent that they will, in fact, induce direct infringement and with full knowledge that Counterclaim-Defendants' products infringe one or more claims of the '876 patent both literally and under the doctrine of equivalents. By way of example only, Counterclaim-Defendants sell and deliver the infringing NCP107X devices to U.S. distributors including Mouser Electronics located in Mansfield, TX and thereafter induce Mouser Electronics to sell and offer for sale the infringing products to customers in the United States thereby directly infringing the '876 patent. Mouser Electronics maintains a website (mouser.com) available to U.S.- based customers that as a result of Counterclaim-Defendants' inducement stocks, sells, and offers for sale the infringing products

including the NCP1070STAT3G (<http://www.mouser.com/ProductDetail/ON-Semiconductor/NCP1070STAT3G>), and NCP1070P065G (<http://www.mouser.com/ProductDetail/ON-Semiconductor/NCP1070P065G>). As of October 13, 2016, these products were in stock in the U.S. and available for purchase and delivery to U.S. customers and, in fact, have been purchased from Mouser Electronics and shipped to U.S. customers.

130. Moreover, Counterclaim-Defendants provide complete power supplies, which include the accused products, such as the NCP1070SOTGEVB (<http://www.mouser.com/ProductDetail/ON-Semiconductor/NCP1070SOTGEVB>), along with instructional materials to facilitate and induce customers to build similar infringing power supply products. *See, e.g.,*

http://www.onsemi.com/pub_link/Collateral/NCP1070SOTGEVB_TEST_PROCEDURE.PDF.

Examples of these complete power supplies are also provided to U.S.-based distributors including Mouser Electronics to be sold to U.S. customers thereby inducing additional acts of direct infringement; for example, the NCP1070SOTGEVB is stocked by Mouser Electronics in the U.S. and as of October 13, 2016 has been sold to U.S.-based customers. Counterclaim-Defendants further induce third parties to design the accused products into power supplies to be used in the United States, by, for example, providing datasheets, application notes, design notes, tutorial videos, and other collateral on their Internet website available to customers and instructing those customers how to incorporate the accused products having the infringing frequency jitter circuit into a power supply. *See, e.g.,*

http://www.onsemi.com/pub_link/Collateral/NCP1070-D.PDF,

<http://www.onsemi.com/PowerSolutions/product.do?id=NCP1070>.

131. Counterclaim-Defendants additionally advertise and promote the use of the accused products via YouTube videos demonstrating their use and how to include the products in a complete power supply. *See, e.g.*, https://www.youtube.com/watch?v=P4EW_YWLnnY (entitled High-Voltage Switcher Regulator for Low Power Offline SMPS - NCP1070SOTGEVB, Published on Aug 29, 2014). In addition, Counterclaim-Defendants employ sales representatives and field applications engineers that interact with and work directly with customers to assist them in designing complete power supplies that, upon information and belief, Counterclaim-Defendants know or have reason to believe are intended to be sold worldwide including in the United States.

132. On information and belief, Counterclaim-Defendants know that the accused products have no substantial non-infringing uses because the accused circuitry is used whenever the controller is operated, and in fact, because the infringing frequency jitter circuitry is necessarily present in the products as sold, operates by default and cannot be disabled by a customer, necessarily infringe one or more claims of the '876 patent both literally and under the doctrine of equivalents and thereby contribute to the infringement of third parties that use the NCP107X in infringing power supply designs.

133. In view of Counterclaim-Defendants' long history of notice of Power Integrations' '876 patent, their repeated failed attempts to challenge the validity of the '876 patent (including two final judgments of no invalidity), their prior adjudged direct infringement (including two final judgments of infringement), and their prior and present knowledge of their ongoing infringement, Counterclaim-Defendants' continued infringement of the '876 patent is willful, deliberate, and consciously wrongful, and Counterclaim-Defendants have no good reason to believe their infringing conduct is defensible. Counterclaim-Defendants' acts of infringement

are now, and will continue to be, willful so as to warrant the enhancement of damages awarded as a result of their infringement.

134. Counterclaim-Defendants' past and continued acts of infringement have caused irreparable harm to Power Integrations for which money damages are inadequate compensation. Counterclaim-Defendants' infringement has caused irreparable injury to Power Integrations and will continue to cause irreparable injury until Counterclaim-Defendants are enjoined from further infringement by this Court.

COUNTERCLAIMANT'S PRAYER FOR RELIEF

WHEREFORE, Counterclaim-Plaintiff requests the following relief:

(a) judgment that Counterclaim-Defendants willfully infringe the '483 patent both directly and indirectly and that the patent is valid;

(b) judgment that Counterclaim-Defendants willfully infringe the '871 patent both directly and indirectly and that the patent is valid;

(c) judgment that Counterclaim-Defendants willfully infringe the '788 patent both directly and indirectly and that the patent is valid;

(d) judgment that Counterclaim-Defendants willfully infringe the '475 patent both directly and indirectly and that the patent is valid;

(e) judgment that Counterclaim-Defendants willfully infringe the '366 patent both directly and indirectly and that the patent is valid;

(f) judgment that Counterclaim-Defendants willfully infringe the '851 patent both directly and indirectly and that the patent is valid;

(g) judgment that Counterclaim-Defendants willfully infringe the '876 patent both directly and indirectly and that the patent is valid

(h) a permanent injunction preventing Counterclaim-Defendants and their officers, directors, agents, servants, employees, attorneys, licensees, successors, assigns, and customers, and those in active concert or participation with any of them, from making, using, offering to sell, or selling in the United States or importing into the United States any devices that infringe any claim of the '483, '871, '788, '475, '366, '851, and '876 patents or contributing to or inducing the same by others;

(i) judgment against Counterclaim-Defendants for money damages owed to Power Integrations for Counterclaim-Defendants' infringement of the '483, '871, '788, '475, '366, '851, and '876 patents in an amount to be determined at trial;

(j) that such money judgment be trebled as a result of the willful nature of Counterclaim-Defendants' infringement;

(k) an accounting for infringing sales not presented at trial and an award by the Court of additional damages for any such infringing sales;

(l) costs and reasonable attorneys' fees incurred in connection with this action pursuant to 35 U.S.C. § 285; and

(m) such other and further relief as the Court finds just and proper.

A JURY TRIAL IS DEMANDED AS TO THESE COUNTERCLAIMS BY POWER INTEGRATIONS.

/s/ Andrew E. Russell

John W. Shaw (No. 3362)

Andrew E. Russell (No. 5382)

SHAW KELLER LLP

I.M. Pei Building

1105 North Market Street, 12th Floor

Wilmington, DE 19801

(302) 298-0700

jshaw@shawkeller.com

arussell@shawkeller.com

Attorneys for Defendant

OF COUNSEL:

Joseph B. Warden

FISH & RICHARDSON P.C.

222 Delaware Ave, 17th Floor

Wilmington, DE 19801

(302) 652-5070

Frank E. Scherkenbach

FISH & RICHARDSON P.C.

One Marina Park Drive

Boston, MA

(617) 521-7883

Michael R. Headley

Howard G. Pollack

Neil A. Warren

FISH & RICHARDSON P.C.

500 Arguello Drive

Redwood City, CA

(650) 839-5007

Dated: September 29, 2017